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(54) **Redundant switched reluctance motor.**

(57) The stator assembly (32) of the multiple phase switched reluctance motor (30) has a plurality of inwardly salient teeth (34a-34l) terminating at a central bore (36). The rotor assembly (38) disposed for rotation in the bore (36) has a plurality of rotor teeth (42a-42d). The stator assembly (32) has at least one redundant pole set for each motor phase. The rotor assembly (38) has a corresponding proportional number of rotor teeth. The redundancy of the poles helps distribute ovalizing forces on the motor assembly. This lessens the effect of these forces and reduces motor noise produced by the assembly in response to the forces. In addition, the stator assembly (32) can have multiple teeth per pole and the rotor assembly (38) a multiple of the determined rotor teeth. The number of rotor teeth exceeds the number of stator teeth so the rotor teeth overlap the stator teeth. This improves starting torque in a desired direction of motor rotation.

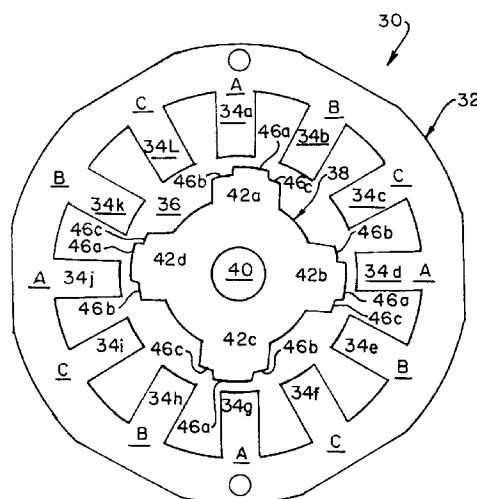


FIG. 2.



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 93 63 0037

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
D,X D,Y	US-A-4 998 052 (ERDMAN ET AL) * column 2, line 44 - column 2, line 63 *	1,16 2,6,7, 10,12, 13,17 3-5,11	H02K19/10
D,A	abstract * column 6, line 21 - line 42; figures 3,12 *		
Y	US-A-5 111 096 (HORST) * column 2, line 57 - line 67; figure 5 *	2,10,17	
Y A	US-A-4 947 066 (GHIBU ET AL) * claim 5; figure 3A *	6,7,12 19-21	
Y	IEEE TRANSACTIONS ON ROBOTICS AND AUTOMATION vol. 7, no. 6, December 1991, NEW YORK, US pages 733 - 742 XP000241575 R. S. WALLACE & D. G. TAYLOR 'Low-Torque-Ripple Switched Reluctance Motors for Direct-Drive Robotics'	6,7,12, 13	
A	* page 733, right column, paragraph 4 - page 734, left column, paragraph 2; figure 1; table ii *	2,19	TECHNICAL FIELDS SEARCHED (Int.Cl.5) H02K
A	EP-A-0 455 578 (EMERSON ELECTRIC) * figures 8,9 *	3,11,18	
X A	US-A-4 883 999 (HENDERSHOT) * column 13, line 16 - column 14, line 65; figures 10B-10E; table i *	1,5 8,14,23, 26	
A	EP-A-0 180 815 (KOLLMORGEN TECHNOLOGIES CORPORATION) * page 56, line 10 - line 16 *	22	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 October 1993	Examiner ZOUKAS, E
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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